

## THE 1996 PRESIDENTIAL ADDRESS—PART 2 THE BIOLOGY OF PLUME-MOTHS

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In recent years the Presidential Address has covered a number of topics. Last year Malcolm Scoble concentrated on the relationship between societies and museums, providing thought-provoking ideas on the future direction of the Society. In the previous year Paul Waring gave us a thorough review of the Society's field meetings highlighting the depth of field knowledge held in the membership. Other recent Presidents have covered conservation issues, light traps and site-specific surveys. For my address I would like to return to one of the original aims of the Society and speak simply about a group of insects. I first became interested in the Plume-moths about twelve years ago in order to give a talk to the Amateur Entomologists' Society. I settled on the Plume-moths as a topic because little modern information had been published on this group, and consequently many entomologists knew very little about them. As many members will know, when you start to study a subject in detail, finding the answer to one question reveals ten more waiting to be answered. Thus is the entomologist hooked!

The Irish plume (*Platyptilia tesseradactyla* (L.)) is not a familiar insect to most British entomologists as it is only known from Ireland. It was first discovered at Clonbrock in the east of County Galway in June 1895. However, the stronghold of this insect has always been the Burren region of County Clare where it is widespread in grassy areas with rocky outcrops. The Irish plume is not restricted to the Burren, for there are scattered records from neighbouring Irish counties and several colonies exist nearly two hundred miles away on mountain tops near the town of Pomeroy, County Tyrone, in Northern Ireland. These were discovered by Thomas Greer in 1935 and as far as I can discover they have not been looked for since.

The larva feeds on mountain everlasting (*Antennaria dioica* (L.)), which is a member of the Compositae and related to cudweed (*Filago vulgaris* Lam.). Mountain everlasting forms small untidy clumps of leaves from which cream or pink, rather fluffy flowers arise. It is a common plant in northern England and Scotland, but is small and easily overlooked, and it is possible that the Irish plume may yet be discovered in a sheltered spot on the west coast of Great Britain.

The dull yellow eggs are laid on the flowers in June, and are pushed a couple of millimetres into the mass of hairs that surround the florets. The egg hatches in about a fortnight and the young larva feeds out of sight on the developing seeds. After two or three weeks the small larva enters the flower stem and makes its way down to the leaves at ground level. Here it burrows into a bud and excavates a small cavity where it remains for the rest of the summer, entering hibernation in October. At this stage there is no outward sign that the larva is present in the plant. In early spring it resumes feeding, eating out the contents of the central bud but leaving a shell of undamaged leaves and moving on to a fresh bud at night. Occasionally, black frass spills from the infected bud, but usually there is very little trace of the larva.

Fully-grown the larva is 7–9 mm long, cigar-shaped, with a small black head and prothoracic plate. The body has a dull red ground colour with irregular dirty white patches, and is well camouflaged amongst the developing flower buds (Fig. 1). By early to mid May the larva is ready to pupate. The site chosen is normally a non-flowering rosette with a bud that is just opening. The centre of the bud is eaten out

but the outer pair of leaves are held together internally with silk leaving a small natural opening at the top 2–3 mm across.

The rather angular pupa is black or dark olive marked with white; in shape it resembles the pupa of the common coltsfoot plume (*Platyptilia gonodactyla* [D. & S.]). The pupa rests upright inside the hollow bud and the adult insect emerges through the hole to expand its wings. Occupied buds have a slightly different appearance to healthy buds; the leaves are paler, less shiny and may start to wilt. With practice and hard work it is possible to find full-grown larvae and pupae during the second half of May.

The moth is widespread in the Burren and plants on open, rather wet ground between rock outcrops are the most productive. The moth is a startlingly pretty creature of brown and white, and like all plumes it repays handsomely the act of rearing from the early stages. A female moth, feeding on a flower of mountain everlasting, is shown in Fig. 2.

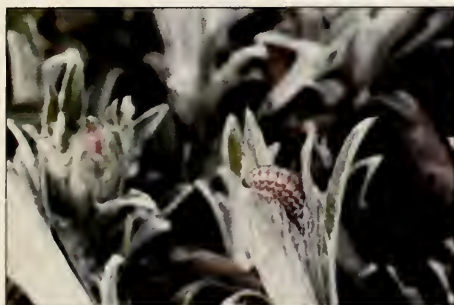
The pretty little saxifrage plume (*Stenoptilia millieridactyla* (Bruand) (= *saxifragae* Fletch.)) has a very interesting history in these islands. It was first noticed in the suburbs of Dublin in about 1940, where it was found to be common and widely distributed in suburban gardens. The larva feeds on mossy saxifrage (*Saxifraga hypnoides* L.) which is a popular garden rockery plant. At the time the origin of this population was a mystery. But, in 1962 it was discovered in the south of the Burren at Moheramoylan and since then has been found to be widely distributed in this region. It seems likely that the moth was introduced to Dublin gardens on plants of saxifrage collected from the Burren. In 1969 Tony Harman caught a specimen of the saxifrage plume in his garden trap in Chesterfield, Derbyshire. Once he had identified the moth he remembered that his next door neighbour, who was Irish, had been on holiday to Dublin in the previous year. On talking to her he gathered that she had brought back some rockery plants and planted them in her garden. This account appears to date the introduction of this moth into the United Kingdom. Since that time it has spread widely into six counties in the midlands and north of England. In 1984 a lone specimen was reported from Scotland when an adult was attracted to a shop light in Paisley, and in May 1996 I discovered it in two more vice-counties close to the suburbs of Glasgow. In almost every record from the UK the moth has been found on rockeries in suburban gardens. It appears to thrive in this habitat, but does not seem to spread into the wider environment.

The egg is laid on the edge of a saxifrage leaf, usually on one of the pointed lobes, in June or July. After hatching the young larva makes a small insignificant mine in the leaf, and gradually makes its way towards the leaf base. It hibernates whilst still small in the thick base of a leaf or in a bud. In April it starts to feed externally on the spring growth of leaves and moves on to the buds and flowers as these appear. Some larvae make rapid progress and are full grown by the time the saxifrage flowers are in bloom. Later larvae feed on the developing seeds by making a hole in the side of the seed case and clearing out the contents. On the Burren it occurs in almost every microhabitat in which the saxifrage is found, but the most productive is a natural rockery at the foot of a cliff. The larva prefers to eat the petals and immature seeds, and a sure sign of its presence on a patch of flowering saxifrage is severe damage to a number of flowers. Looking for larvae on the flowers in May and June is probably the easiest way to record this species (Fig. 3).

The larva, like most plumes, is cigar-shaped. The colour is usually pale green with a broad white lateral line, but the ground colour can vary from white through green to dark red. The larva generally matches the colour of the part of the plant on which it is feeding. The pupa is normally green or reddish. Fig. 4 shows a plant in drought



Plate II. PLUME MOTHS



1. *Platyptilia tesseradactyla* Larva



2. *Platyptilia tesseradactyla* Adult female



3. *Stenoptilia millieridactyla* Larva



4. *Stenoptilia millieridactyla* Pupa



5. *Oxyptilus parvidactyla* Eggs



6. *Oxyptilus parvidactyla* Pupa



7. *Oxyptilus parvidactyla* Adult



8. *Pselnophorus heterodactyla* Larva



Plate III. PLUME MOTHS



9. *Pselnophorus heterodactyla* Pupa



10. *Merrifieldia tridactyla* Larva



11. *Merrifieldia tridactyla* Pupa



12. *Merrifieldia leucodactyla* Adult male



13. *Merrifieldia tridactyla* Adult male



14. *Amblyptilia acanthadactyla* Pupa



15. *Amblyptilia acanthadactyla* Adult



16. *Amblyptilia punctidactyla* Adult

